PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

Lesson Plan

Subject Name: - MVT   **Branch/Semester: - ME - 5th SEM**
Subject Code:- MEC-305A

Lecture No.	Topic to be covered	ICT Tool Used
1st	Introduction to Subject	
2nd	**UNIT-1** Elements of a vibratory system	
3rd	S.H.M, Degrees of freedom, Types of vibrations	
4th	Work done by a harmonic force	
5th	Beats Phenomenon	
6th	Natural frequency by equilibrium and energy methods	
7th	Equivalent spring, linear and torsional systems	
8th	Compound pendulum	
9th	Bifilar and Trifilar suspensions	
10th	Different types of damping	
11th	Differential equations of damped free vibrations	
12th	Initial conditions, logarithmic decrement	
13th	Vibrational energy and logarithmic decrement	
14th	**UNIT-2** Sources of excitation	
15th	Equations of motion with harmonic force	
16th	Response of rotating and reciprocating unbalanced system	
17th	Support motion	
18th	Vibration Isolation	
19th	Force and Motion transmissibility	
20th	Forced vibrations with coloumb damping	
21st	Forced vibrations with structural damping	
22nd	Forced vibrations with viscous dampings	
23rd	**UNIT-3** Multi-degree of freedom systems	NPTEL
24th	Principle modes of vibrations	NPTEL
25th	Influence co-efficient	NPTEL
26th	Matrix method	NPTEL
27th	Orthogonality principle	NPTEL
28th	Dunkerleys equation	NPTEL
29th	Matrix iteration method	NPTEL
30th	Holzer Method	NPTEL
31st	Rayleigh Method	NPTEL
32nd	Rayleigh-Ritz methods	NPTEL
33rd	Stodola method, Hamilton principle	NPTEL

34th	Transverse vibrations of strings, Longitudinal Vibrations of bars	NPTEL
35th	Lateral vibration of beams, Torsional vibration of circular shafts	NPTEL
36th	Unit- 4 Tribology in design, Tribology in industry, Lubrication: Basic modes of lubrication	PPT
37th	Lubricants, Properties of lubricants, Recycling of used oils and oil conservation	PPT
38th	Laws of friction, kinds of friction, causes of friction	PPT
39th	Theories of friction, Effect of surface preparation	PPT
40th	Wear between solids and liquids,Theories of wear	PPT

Signature